

REMARKS

By this amendment, Applicants have amended claims 1 and 6 as suggested by the Examiner. Claim 7 has been amended to provide antecedent basis for a set of instructions. Claim 4 has been amended to provide antecedent basis for palladium. These amendments do not add new matter. Applicants respectfully request entry of these amendments and allowance of the pending claims.

I. Allowable Subject Matter

The Examiner indicated that claims 2-5 would be allowable if rewritten in independent form. Applicants thank the Examiner for indicating allowable subject matter.

II. IDS

The Examiner has indicated that US 2004/001782 to Kumar *et al.* listed on the International Search Report is an incorrect number and is invalid. It appears that the European Examiner failed to include an extra zero in the number in the search report. Applicants re-submit the reference correctly as US 20040001782. Therefore this issue is now moot.

III. Claim Objections

Claims 1 and 6 are objected to because they recite “on a honeycomb carrier a catalytic coating.” In response, Applicants have amended the claims according to the Examiner’s instructions to include “a catalytic coating on a honeycomb carrier.” Claim 6 has also been amended to replace “or” with “and” as recommended by the Examiner. Therefore, these objections are now moot.

IV. Rejection under 35 U.S.C. §112, Second Paragraph

The Examiner rejects claim 7 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for lack of antecedent basis for reciting “as palladium.” By this

amendment, Applicants have amended claim 7 to include “as a palladium concentration profile” and, therefore, provide antecedent basis for this phrase. Accordingly, Applicants respectfully submit that this rejection is now moot.

V. Rejection Under 35 U.S.C. 103(a)

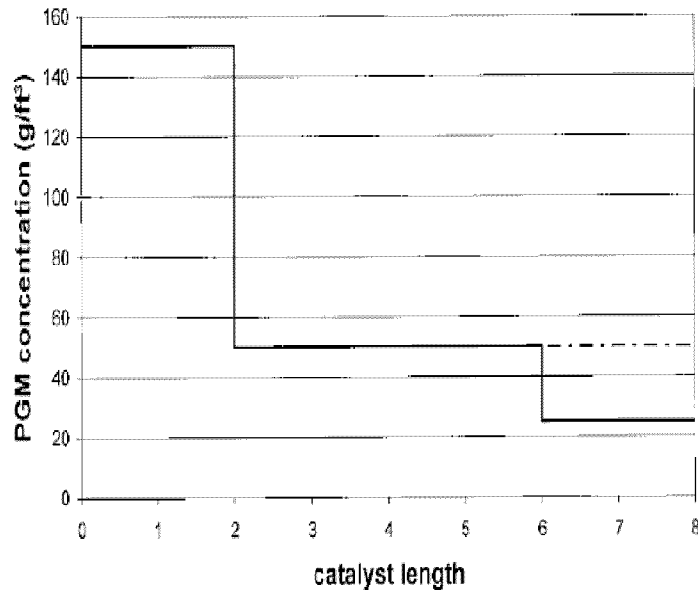
Claims 1 and 6-10 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,510,086 (Hemingway). Applicants respectfully traverse this rejection.

The current claims are directed to an exhaust gas cleaning catalyst wherein the catalytic coating comprises at least one catalytically active precious metal component which exhibits (1) *a continuously varying concentration profile* along the axis of the honeycomb carrier and the honeycomb carrier has three abutting regions with (2) *a low concentration in the first or upstream region* at the inlet face of the carrier and with (3) *a steep increase to a peak concentration in the second or intermediate region* and (4) *a third concentration in the third or downstream region which is equal to or lower than the peak concentration in the second region*. Applicants respectfully submit that Hemingway does not make obvious the currently claimed features.

Hemingway teaches a conventional zoned catalyst having a high precious metal concentration in a first upstream zone. More specifically, Hemingway only discloses embodiments where the highest PGM concentration (peak concentration) is in the first region, where the second and third regions have a lower concentration than the first region and the third region is lower or equal to the second region (see Hemingway col. 2, lines 21-47). Therefore, Hemingway teaches away from the claimed honeycomb carrier having (1) a low concentration in the first or upstream region; (2) a peak concentration in the second or intermediate region and (3) a concentration in the third or downstream region that is equal to or lower than the peak concentration in the second region because Hemingway teaches a high precious metal concentration in a first upstream zone and that the second and third regions have a lower concentration than the first region. This is opposite to Applicants’ low concentration in the first region and the

peak concentration in at least the second region. Moreover, Hemingway's concentration profile, in contrast to Applicants' concentration profile, is not "continuously varying" as Hemingway gives discrete values for his PGM concentration.

The PGM concentration profile taught in Hemingway is illustrated in the figure below:



As you can see in Hemmingway, the peak PGM concentration is in the first region, while the second region has a lower concentration and third region has a lower concentration than the first region and the second region.

In contrast, the current claims and as shown in Figure 3 of the current application has the following PGM concentration profile:

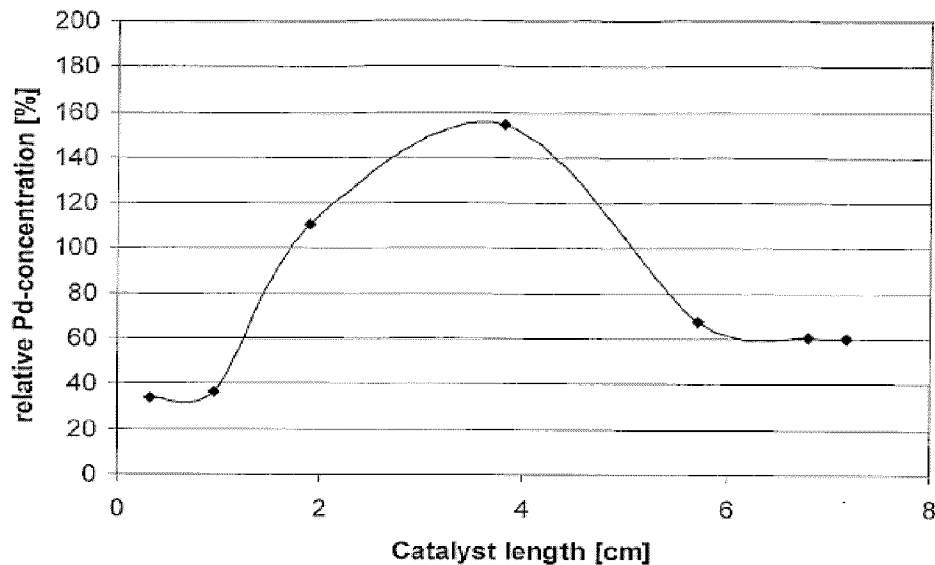


Figure 3

As you can see, Applicants have a continuously varying concentration profile. Applicants' low concentration is in the first region and the peak concentration is in the second region and the third or downstream region is lower than the peak concentration in the second region. Applicants' specific concentration profile results in a catalyst that exhibits superior performance that exhibits reduced poisoning and thermal damage as described on page 2, lines 23-32 of the current application. Further, the catalyst has longer life. Hemmingway simply does not make these features obvious.

Hemmingway teaches a conventional zoned catalyst having a high precious metal concentration in a first upstream zone that has a catalyst activity degradation profile similar to those in the prior art that is shown in Figure 2 of the current application. This arrangement of the zones causes the catalyst to be subject to extensive poisoning.

In contrast to Hemmingway, the current catalyst has reduced poisoning because, among other things, the peak concentration of PGM is not located in the first zone, which is mainly affected by poisoning (see Applicants' specification page 4, line 12 to page 5 line 14). Instead, Applicants put the peak concentration in at least the second zone. Accordingly, Applicants respectfully submit that the claims cannot be considered obvious over Hemmingway and request that the rejections under 35 U.S.C. §103(a) be

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reconsidered and withdrawn.

VI. Conclusion

No additional fee is believed to be due with respect to filing this response. If any additional fees are due, or an overpayment has been made, please charge, or credit, our Deposit Account No. 11-0171 for such sum.

If the Examiner has any questions regarding the present application, the Examiner is cordially invited to contact Applicant's attorney at the telephone number provided below.

Respectfully submitted,

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